

Autonomy for Rural Adults: Advance Directives in Primary Care

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Abstract

Completion of advance directives (AD) prevent unwanted care. In primary care practices, systematic integration of AD documentation can lead to less intrusion of patient autonomy, remove a source of moral injury and ethical ambiguity for providers, family and caregivers. This project examined the effects of an evidence-based AD completion activity on AD completion rates in a rural, primary-care clinic. The theory of self-determination (SDT) guided this project; SDT describes why and how persons are motivated to engage in acts of self-determination. Recruitment was self-selective as all adult clients had equal access to intervention materials to complete an AD, in English or Spanish, on site. Each client of the clinic signed the site-specific consent form authorizing release of information for study use. Volunteer staff collected project data via chart audits using a pre/post intervention design. Data analysis was performed via statistical software. This project analyzed the population demographic data via descriptive statistics. Results indicate that passively providing AD materials, even in multiple languages and formats is not enough to engage self-motivation to complete an AD. This attempt to improve AD completion in primary care reflects the larger body of knowledge. In summary, interpersonal communication is needed to stimulate relatedness and improve competence, the two precursors of acts of self-determination.

Keywords: advanced directives, advance care planning, primary care, rural,

Problem Statement

Rates of AD completion are low across the United States, particularly in populations of low socioeconomic status (SES) (Hansen et al., 2012; Harvey et al., 2019; Klingler et al., 2016). Though rates have increased over time, currently only one in three Americans have AD documentation, and even acute care settings continue to show low rates of systematic AD documentation (Barkley et al., 2019; Enguidanos & Ailshire, 2017; Klingler et al., 2016; Platts-Mills et al., 2017; Yadav et al., 2017). This gap has a detrimental effect on individuals and the society as a whole, the costs of which cannot be ignored (Karnik & Kanekar, 2016; Klingler et al., 2016). Providers are frequently hesitant to discuss death and call for more education; while documentation and implementation of AD in all types of care facilities in the United States, remains fragmented and disconnected (Abu Al Hamayel et al., 2019; Birchley et al., 2016; Chen et al., 2015; Clayton et al., 2013; Johnson et al., 2018; Karnik & Kanekar, 2016; Levoy et al., 2019).

Purpose and Rationale

If the rate of AD completion does not rise dramatically, resources in an already fraught health care economy are further misallocated. If the rate of AD completion and adherence does not become a systematic or commonplace protocol, moral injury and burn out will increase; countless adults may experience an overmedicalized death due to reduced agency. It is clear that systematic integration of AD documentation in primary care practices can lead to less intrusions on patient autonomy, and removes moral injury and ethical ambiguity for providers, family and caregivers (Enguidanos & Ailshire, 2017; Karnik & Kanekar, 2016; Walkey et al., 2017; Wendlandt et al., 2018). Explicit AD discussions and documentation should be initiated by providers with all adults to ameliorate this gap. (Bravo et al., 2012; Courtright et al., 2017; Harvey et al., 2019; Karnik & Kanekar, 2016; Splendore & Grant, 2017). The project purpose is to improve quality of care for rural adults by ensuring their autonomy in a safe, effective, equitable, efficient, timely, patient-centered way through initiating an AD completion process in a primary care setting.

Background and Significance of AD Completion

Among America's seniors, rural elders make up a larger percentage of their regional population and achieve lower levels of education and lifetime earnings compared to their city dwelling counterparts. This lower SES is compounded by the scarcity of healthcare resources in rural areas (Bail & Mehrotra, 2016; Cohen & Bennett, 2017; Hansen et al., 2012; Harvey et al., 2019). Additional soft data indicate that these clinicians are often the only provider the patients have access to in their community. They are the only link between home and hospital (J. Hunt, MD, personal communication, December 5, 2019). This gap has a detrimental effect on persons at an individual and community level (Karnik & Kanekar, 2016; Klinger et al., 2016).

Significance of Rural Setting and Population

Rural providers historically have had long-term relationships with their patients; this leads to the notion that the provider knows the patient well enough to determine what he or she may want in a given situation (Bail & Mehrotra, 2016; Cohen & Bennett, 2017; Weaver et al., 2017; Winterton et al., 2016). However, recent trends indicate an aging healthcare workforce in rural areas, with high turnover of newer practitioners (Crouch et al., 2018; Hansen et al., 2012; Winterton et al., 2016; Ysasi & McDaniels, 2018). This invalidates the sense that rural providers know their patients well. Indeed, the scarcity they encounter makes all relationships of heightened importance in order to access resources and care. In turn, family, neighbors, and paid help must coordinate in order to maximize the effectiveness of care for one individual (Bail & Mehrotra, 2016; Cohen & Bennett, 2017; Harvey et al., 2019; Winterton et al., 2016). Qualitative studies confirm the need for basic health education and access to chronic health management resources (Bail & Mehrotra, 2016; Scogin et al., 2016; Weaver et al., 2017; Winterton et al., 2016; Ysasi & McDaniels, 2018). While lack of AD completion is an issue at hand for all of America's aging population, the rural populations are at a heightened risk due the aforementioned variables.

Internal Data Leads to PICO

In rural Southwest America, at an outpatient, primary care clinic, volunteer providers offer medical and

professional counseling. The clinic of question is a 501(c)3 nonprofit organization licensed by the state government as an outpatient treatment center and a designated charity for the working poor. Providers offer affordable primary care services to the uninsured and underserved of all ages. Hard data from this site regarding rate of AD completion and documentation is nonexistent. The volunteer clinic does not request, or systematically file or keep track of the percentage of patients with any AD in place. The area is geographically situated such that it is likely to remain rural for decades to come; surrounding land is protected from any development. This creates an island-effect as inhabitants cannot afford to travel in order to choose a different center for care, whether acute or chronic. This site is most likely to reach those in most need. Soft data from site clinician indicate that an intervention to increase AD engagement, completion, and documentation would be welcome as no such system is in place to initiate discussion, completion, and documentation of AD within the clinic. This inquiry has led to the following PICO question: In a primary care practice treating rural adults (P), how do advance care planning interventions (I) compared to no intervention (C), affect the rate of advance directive completion (O)?

Literature Review and Evidence Synthesis

Search Strategy, Sources, and Process

In order to find the most relevant evidence with regard to the PICO question, a comprehensive search was performed in the following academic research databases: PubMed, Academic Search Premier (ASP), and Education Resources Information Center (ERIC) databases were conducted. Inclusion criteria included older adults, defined as 55+ years, outpatient or primary care setting, and AD documentation as an outcome. Exclusion criteria included non-adult samples, terminally ill samples, acute care settings, and those studies only measuring qualitative results. Search limitations included: full text available and publication in the last five years with peer-review. Keyword selection was conducted with regard to the fact that several variations of legal documents that can guide end-of-life (EOL) care. The initial searches included all keywords: *adult(s)*, *older adult(s)*, *geriatric*, *aged*, *senior(s)*, *elder(s)*, *elderly*; *intervention(s)*, *program*, *strategy*, *advance directive(s)*,

advance care planning, living will(s), end of life; primary care, primary provider, outpatient, clinic. These databases were searched with these terms each connected by Boolean OR, with each component line of search connected by AND.

Search Yield

The PubMed database search yielded 108 high-quality AD studies, the highest number of relevant studies. In order to isolate the higher-level studies, the original yield of 108 was refined by clinical trials, randomized controlled trials, or systematic reviews. This yielded 8 high level studies that also matched all PICO components for final review. The ASP database was searched using Boolean connectors AND/OR, while combining searches; one that used *rural elder(s)* OR *seniors* keywords, and another with *intervention(s), program, strategy*, keywords connected by OR; both contained *AD* and *primary care* collated terms connected by OR. The Boolean connector AND was used with these two searches to go from over 5,000 studies to 13 pertinent studies. Only one was selected for final review. The ERIC database search yielded only 14 studies. Indeed, after brief review, only one was kept. Ten articles were kept for final evaluation after rapid critical appraisal eliminated studies that did not encompass all PICO components, see Table 1, Appendix A for study evaluations.

The Foundation of Research and Evidence on AD Completion

The scientific community has conducted recent high-level studies comparing modalities for increasing AD completion. Authors of the PREPARE clinical trials and those utilizing multi-media interventions report statistically significant improvements with readiness to complete, as well as completion (Sudore, Boscardin, et al., 2017; Sudore, Cuervo, et al., 2018; Sudore, Heyland, et al., 2017; Sudore, Schillinger, et al., 2018; Toraya, 2014; Zapata et al., 2017). These interventions include video modules and structured discussion sessions that aid the provider and patient in starting AD discussion while increasing health literacy (Abu Al Hamayel et al., 2019; Bose-Brill et al., 2018; Brungardt et al., 2019; Lum et al., 2018; Nouri et al., 2019; Ramsaroop et al.,

2007; Sudore, Boscardin, et al., 2017; Sudore, Schillinger, et al., 2018; Toraya, 2014; Walling et al., 2019; Zapata et al., 2017). Increasing the variety of AD choices made available to patients does not increase completion rates; however, not explicitly presenting an opt out or a no action choice in an AD engagement document shows promise, especially among men (Courtright et al., 2017; Josephs et al., 2018).

Provider Educational Needs

Providers and medical residents frequently voice the need for more training and education (Chen et al., 2015; Karnik & Kanekar, 2016; Rucker & Browning, 2015; Tung & North, 2009). In their study, Bergman et al. (2016) found that web-based modules had positive effect on attitudes and knowledge of EOL care. One-to-one training resulted in 62% of participants engaging in EOL discussion with patients post-training (Clayton et al., 2013). Group provider and resident training of EOL discussion practice through scripts regarding initiating tube feeding, a do-not-resuscitate order, and withdrawing life-sustaining technology resulted in providers purporting significant increase in ability to carry out these discussions comfortably, respectfully, and with confidence to respond to emotional cues (Rucker & Browning, 2015).

Critical Appraisal & Synthesis of Evidence

Critical appraisal of the final ten articles was performed according to appraisal outline for quantitative studies as described in Appendix B of Melynck and Fineout-Overholt (2019). The quality of and strength of evidence as whole is moderate; there is plethora of content, but the broad spectrum of advance care planning interventions (ACPI) makes determining superiority of efficacy for one particular intervention cumbersome. Among those selected for this review, sample demographics are diverse and varied, but are similar with regard to mean age and gender ratio, see Table 2, Appendix A for details. Table 2 illustrates outcomes across the studies reviewed and the interventions utilized. In particular group visits (GV), motivational interviewing (MI), and use of the PREPARE website have consistent results. Overall results can be characterized by amount of time and type of interaction with participants, with one session and multi session interventions (OSI, MSI) both

showing efficacy, but dependent on the setting. Additionally, providing a written booklet, regardless of format, at time of intervention increased AD documentation when used as an adjunct.

Financial incentive has minimal impact on its own, but shows synergistic effect when paired with the aforementioned interventions (Barnato et al., 2017). Table 2 illustrates outcomes across the studies reviewed and the interventions utilized. All ten studies directly stated that the authors' purpose was to determine the effectiveness of intervention on ACPD. Measurement of AD by chart review took place via participant or provider statement in the Nedjat-Haiem et al., (2019) and Overbeek et al. (2018) studies. Zapata et al. (2017) did not directly state how AD documentation was measured, but semantic context of outcome discussion leads one to think direct measure of some kind occurred. The remaining seven studies all used direct measure of ACPD by chart review. Data analysis with linear regression is nearly ubiquitous among the studies. Analysis via paired and unpaired t-tests, χ^2 tests, Fisher exact are conducted by all studies except Lum et al. (2017), using the McNemar test. For all ten, a p value of less than 0.005 is considered significant, and the only authors that did not report a statistically significant increase in ACPD are those utilizing behavioral economic theory to ground the study or used a participant financial incentive (Barnato et al., 2017; Courtright et al., 2017).

Theoretical and Implementation Frameworks

IHI Quality Improvement Framework: Setting Aims and Use of Plan-Do-Study-Act Cycle

The Plan-Do-Study-Act (PDSA) is an appropriate framework for implementation of a ACPD in a primary care clinic, as PDSA is easily adoptable and widely variable. An easy to read PDSA worksheet is readily available online, for example sheet proposed for project use see Figure 3, Appendix B. PDSA is a suitable implementation framework, as AD documentation is a quality indicator for the major governmental healthcare programs and PDSA is routinely used in similar healthcare quality improvement projects and its presence as a framework for such projects predominates the literature (*Plan-Do-Study-Act (PDSA) Cycle* |

AHRQ Health Care Innovations Exchange, n.d.; *Plan-Do-Study-Act (PDSA) Worksheet* | IHI - Institute for Healthcare Improvement, n.d.). PDSA is a continuous cycle, with each stage defined by goal-directed steps, seen in Figure 3, Appendix B.

Application of and Rationale for International HealthCare Improvement (IHI) Model for Quality Improvement as Implementation Framework

Setting aims is the core step of IHI Model for Quality Improvement (QI) implementation. By setting aims together, a team aligns common goals and the importance of shared vision; as such, it is an appropriate framework for implementation of QI project at an innovative site (*Quality Improvement Essentials Toolkit* | IHI - Institute for Healthcare Improvement, n.d.). The model has two parts. First, three guiding questions that hone the team goal: What are we trying to accomplish; How will we know there was improvement; and What change can be made to result in improvement. These answers followed by completion of the second part: a Plan-Do-Study-Act (PDSA) cycle, again a suitable implementation tool. Only with routine cycling of data, team evaluation, and use of a structured plan of action can concurrent changes be made to reach the project goal of 100% AD documentation. Additionally, this project's aims align with IHI Model for QI and Institute of Medicine (IOM) aims: safety, effectiveness, patient-centered, timely, efficient, and equitable; further supporting the use of this framework to guide project implementation (*Quality Improvement Essentials Toolkit* | IHI - Institute for Healthcare Improvement, n.d.). Setting the outcome measure as an empirical value (a verifiable AD document by chart audit) reflects the theory of Self-Determination Theory (SDT), whereby the physiologic need of autonomy becomes a self-motivated behavior after the appropriate competence and relatedness established, validated in study by empirical values (Deci & Ryan, 2000, 2012; Jones et al., 2019; Ryan, 2017).

Application and Rationale of Self-Determination Theory

The theory of SDT has been chosen to guide an evidence-based, quality-improvement project regarding AD completion rates. It is bounded by the concepts of autonomy, relatedness and competence, with the

culmination of the three resulting in self-motivation. SDT is a macro-theory of self-motivation that states one has a physiologic need to embody autonomy and self-determination, based on Maslow's infamous hierarchy of needs. SDT is widely used in health-care related change efforts as it aims to explore autonomy with empirical techniques. In cases where one does not have the appropriate competence, relatedness, no autonomy or self-determination can take place 8/30/2021 5:06:00 PM. These concepts, both semantically and by definition directly parallel the variables of the PICO. SDT allows health care providers and quality innovators alike to systematically understand how intrapersonal factors can affect self-motivation and autonomous behavior (Deci & Ryan, 2012). These authors illustrated the interplay of the concept at hand, see Figure 1, Appendix B for detail (Deci & Ryan, 2000). Additionally, the application SDT been effective in motivating rural adults with other health-related behaviors (Jones et al., 2019). The core concepts of SDT help one synthesize and place the evidence in context; as PREPARE video vignettes allow relatedness, the information increases competence, and results increased AD completion, an autonomy seeking behavior. See Appendix B for illustration of interrelatedness of these concepts as outlined by SDT.

Approved Project Methods

Measuring Quality Improvement & Project Effectiveness: Outcome Measures

As is customary in QI projects the core outcome measure for the project is percent of change over time for AD completion and documentation on site. Data collection will be via chart audit procedure, to be completed at baseline, six, and twelve week intervals during the project. Percentage increases in AD will be evaluated at each interval, with a goal of 100% documentation. A chart audit will de-identify personal information while allowing for demographic variables to be objectively analyzed with descriptive statistics. The site remains with paper charting, so a paper chart audit will be used to collect data. Use of the IHI QI model and adapted PDSA cycle aligns with project duration and process. As interval data is collected, reviewed, and discussed by PI and site champions, changes to project process protocol can be planned, tasks delegated, and

rapid improvements implemented. This reflects the hallmark effectiveness measures by IOM as previously indicated. Drawing from Crowell (2016), evaluating interval chart audit data as an outcome measure is a simple rule, and with limited demographic variables, can have large effects in managing change and chaos.

Recruitment was self-selective as all clients aged 18 years or older had access to available materials to complete an AD in English or Spanish on site. Each patient of the clinic signed the site-specific consent form authorizing the release of de-identified information for study use. These methods were approved by the Arizona State University Internal Review Board in September 2020. Data collection occurred for the following 12 weeks, spanning October, November, and December 2020 for in-person visits. The site atmosphere and meager means necessitated a simple, cost-effective plan to bring AD completion opportunities to local adults. Site owned iPads, online AD preparation site, pre-printed AD documents, and patient charts were utilized to carry out the bulk of the project.

Project Budget and Budget Justification

See Appendix C for budget details. The following is justification for the above items budgeted culminating with the total projected project cost:

1. Personnel:

A translator may be needed for site specific project information and flyers about the project created by PI. All other needed materials were already available in Spanish. While some translators are paid less than 17\$/hr, research suggests that 15\$/hr is a humane wage. 17\$/hr reflects the importance of the materials translated and services to which they will provide to underserved adults. The site is all volunteer, as such, no provider or staff are paid. However, competitive rates of compensation should be considered for future budget planning of this project in a different setting. As such, all income/compensation of staff is considered in-kind support for this project.

2. Operations and Materials:

Privacy/data safety equipment: To provide the security for patient privacy, all documents related to the project will be stored in a locked file cabinet on site; additional locked file cabinet at the PI home is in-kind support as it is already in place and available for use. Data will be nominalized and anonymized upon chart audit for data collection. In order to move hardcopy data from collection on site to PI home, a portable rolling file cabinet will be needed to ensure data safety during transit.

Technology, Supplies and Internet Access:

- a. Intellectus software is necessary to run the data analysis. The latest version has been made available to graduate ASU Edson nursing students. As such, the cost is listed as in-kind.
- b. 3 iPads are available for use at site; all needed components are also on site for use. These iPads were a donation from a local philanthropist. The cost to purchase a standard iPad was considered due to a portion of the intervention being based on the use of this handheld, Wi-Fi enabled device.
- c. Quality Internet Access: The site is experiencing a lull of in-person visits due to COVID-19 and is a paper chart-based practice. The site may not need internet, and budget concerns cannot guarantee internet access for this project. As such, cost of monthly access in the area was considered as well as cost of new router and installation.
- d. Utilities/Use of space: The site is a 501c3 non-profit for the working poor, un- and underinsured population of rural Arizona; all providers and staff on site are 100% volunteer. COVID-19 has disrupted normal donation flow, and the cost to maintain operations should be considered as this project brings an essential service to an underserved population.
- e. Printing/duplicating: Two reams of normal copy paper will suffice for the printing needs. Ink costs and the average cost of a desktop and a printer to upload materials and print them were included, but PI will be able to use this technology on-site. This is considered a form of in-kind support.

Indirect Costs and Revenue

Indirect costs are solely travel and lodging expenses due to the site location in relation to PI residence. Payson, AZ to Tempe, AZ is roughly 86 miles each way using AZ-87; which closes frequently due to inclement weather and brush fires. The shortest detour up I-17 to the AZ-270 makes the trip 167 miles each way. The cost of fuel was a considered for this project.

No projected revenue is estimated for this project. The benefit of the project with respect to monetary interest is only at a macro scale when less invasive procedures and less time spent on ventilators at end-of-life are commonplace. Under these circumstances, it is likely that healthcare system revenue will increase.

Results

The data extraction via chart audit revealed known and unknown gaps. Of the 86 unique patients that completed an in-person visit to clinic, not one completed an AD during the 12-week data collection period. Due to a lack of pertinent AD data, no Chi-square or other statistical analyses can be completed. Hence, the descriptive statistics of the chart audit data is the main value-added impact for the site. Prior to project initiation, only gender and age were available via patient charts. The descriptive data informs the providers and staff about the qualities and proportions of clients they serve. Of the 86 clients with an in-person visit, the following descriptive statistics were calculated: 60% (n=52) identified as female and 40% (n=36) identified as male, 78% (n=67) identified English as their preferred language and 16% (n=4) preferred Spanish language, n=5 clients did not identify their language choice; 64% (n=55) identified as non-Hispanic ethnicity and 27% (n=23) identified as Hispanic, 9% (n=8) chose not to identify; 50% (n=43) identified as married, 9% (n=8) identified as divorced/separated, 5% (n=4) identify as widowed/widower, 24% (n=21) identify as single never married, 10% did not identify their marital status; 22% (n=19) identified as having less than a high school education, 45% (n=39) identified as having a high school diploma or equivalent, 16% (n=14) identified as having had some college education, 8% (n=7) identified as having college degree, and 8% (n=7) chose not identify education level achieved. Age at time of visit was clustered by decade, starting at 20 years of age; 4% (n=3) were aged 18-20 years, 12% (n=10) aged 20-30 years, 17% (n=15)

aged 30-40 years, 20% (n=23) aged 40-50 years, 26% (n=30) aged 50-60 years, and 14% (n=12) aged 60 years and older. These descriptive statistics were used to illustrate the resulting data as seen in Figures 4-10.

While the AD materials and resources continue to be present in the lobby of the clinic, the hope is that when the COVID-19 restrictions are lifted, the opportunity to provide one-on-one MI sessions to accompany the AD resources can be re-considered. The resultant demographic data collected will provide valuable information regarding the population served. From this data informed choices can be made about future changes to services rendered, and trends in population can be tracked over time. This provides a framework for future evidence-based practice projects and quality improvement on site.

Discussion

Continued lack of AD completion at this site supports the theoretical basis of SDT and principles of MI, further advocating their use in the future. The preliminary plan for this intervention was derived from the literature review to include an individual MI discussion regarding AD completion with PREPARE site vignette videos. However, during the planning phase, the 2020 COVID-19 pandemic became an international crisis. The restrictions that ensued prevented any in-person MI intervention to be approved by the ASU IRB. Further social distancing guidelines prevented the clinic lobby to be utilized henceforth. The resultant clinic protocol included COVID screening and providing intake documents to patients in their car on the premises. Since the lobby of the site was no longer in use, it prevented potential participants from accessing the AD documents and Wi-Fi connected iPads. After screening and documentation, patients were guided through the lobby and into an exam room, with the clinic completing one visit at a time. After an interim meeting and discussion with site stakeholders, it was decided to provide AD documents and resource packet with the other intake documents during screening. While the site stakeholders and medical director agreed with the change, the volunteer staff on site performing the screening and filing intake

documents were resistant. One on one education was provided about the importance of providing resources and AD documents, even if patients are not willing to complete one at that time. Unfortunately, the medical director and clinic administrator were not physically present during most visits; hence, oversight and management of volunteer staff was quite limited. This was the primary barrier identified. The culture, communication, and resistance to change all presented challenges to presenting patients with AD documents and resource packets.

The secondary barrier, COVID-19 restrictions, prevented the intervention originally intended after literature review to be approved by the IRB. While unfortunate for the intended outcome of the project, the notion that without any MI or one-on-one discussion AD completion does not occur provides more support for it's use. As mentioned in the literature review portion of this manuscript, interpersonal communication and use of MI has shown to be efficacious in motivating individuals to complete an AD, that integral portion could not be incorporated due to COVID-19 restrictions and the resultant lack of completion reflects the importance of dialogue. It also underscores the tenets of the theory chosen to support the intended intervention, SDT. Patients were not able to access to the materials to enhance their competency and have an MI discussion that relates the importance of an AD on an individual level. These components ought to foster self-motivated behavior to complete an AD through the need to embody self-determination and autonomy. However, without these components, no self-determining behavior took place.

The lack of AD outcome was witnessed, which correlates with the previous findings and literature regarding AD completion without interpersonal communication. As long as social distancing is needed, perhaps utilizing telehealth services to provide platform for an AD discussion is potentially a modality to pursue AD completion without in-person visitation. Additionally, conducting the discussion could be done safely in-person with proper personal protective equipment, although some respirators and masks may inhibit ease of communication due to muffling of voices that occurs with respirators and masks. Either way, future work should be focused on establishing a method for in-person or virtual discussions while maintaining the safety measures that are now needed during close, interpersonal activities such as those

between a provider and client. Telehealth's increasing popularity may allow for a face-to-face discussion, however most of the area for this site is without high-speed internet.

Furthering the discussion on the data and results, there was some missing information, as some patients did not complete the demographic questionnaire completely. This may reflect low health literacy of rural populations particularly education level attained as exhibited by the data. Additionally, undocumented immigrant clients are often weary to openly provide personal information, due to fear. This is also a consideration for missing data points. However, with more time and interaction, trust is earned; then perhaps 100% demographic questionnaire information can be gleaned. This suggests that more motivated students should attempt to work within this site for this rural, underserved community to earn trust of the site clients.

The aforementioned leads to the final point of discussion for the project. This project has an important, long-term benefit for all involved. The site now has a good working relationship with ASU nursing endeavors, both for clinical practice as well as evidence-based projects. This improves rural health opportunities for future students, improving cultural competence and understanding of methods that achieve health equity. Additionally, this provides the site with student resource as a pathway to incorporate new evidence-based interventions without site stakeholders having to devote time and energy to the literature synthesis and planning. Further, the new intake and consent form has been reviewed and deemed appropriate for expedited review by the ASU IRB, ensuring ease of initiating similar projects at the site. The hope is that this project was the start to a long term, mutually beneficial relationship between the site, the community, and ASU nursing and health innovation students.

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Appendix A

Evaluation and Synthesis Tables

Table

Citation	Theory/ Conceptual Framework	Design/ Method/ Purpose	Sample/Setting	Major Variables Studied and Their Definitions	Measurement / Instrumentation	Data Analysis	Findings/ Results	Level of evidence/ Decision for Use/Application to Practice
Barnato, A. E. et al. (2017). Financial incentives to increase advance care planning	BET- Stated	QNT;RCT Purpose: Compare Pt FI plus Pr. FI to Pr FI	Pr: N: 38 IG: 18 CG: 20 Pt: N: 367 IG: 186 CG: 190	IV1: \$50 FI w/ PE IV2: PREPARE web site use DV1: ACPD w/in 3 mos DV2: PREPARE site user metrics	DV1: ACPD: Pr reported EMR/CR DV2: blinded, software contractor site data.	LR	ACPD: 27/ 180 (15%)IG and 5/200 (2.5%) CG p= .039) at three months	LOE: II Strengths: Design : randomized intervention with concurrent control. Weaknesses: Poor rate of Pr uptake overall despite universal Pr FI in study, as per

Key: **ACP**-advance care plan **ACPB**- advance care plan booklet; includes: PREPARE booklet, Five Wishes booklets, Adjusted Respecting Choices booklet, **ACPD**- advance care plan documentation; includes: advance directive, living will, surrogate designation, or any advance directive plan discussion documentation, **ACPI**- advance care planning intervention, **AD**- advance directive, **BET**-behavioral economics theory **CBT**-cognitive behavioral theory, **CDw**-community dwelling, **CD**-chronic disease, **CG**-control group, **CHF**- Colorado Health Foundation **CI**-confidence interval, **CLT**- collaborative learning theory, **CR**- chart review **DEMV**- demographic variables **DMC**-decision making capacity (includes severe visual loss), **DV**-dependent variable; **EC**- exclusion criteria, **EOL**- end of life, **EMR**- electronic medical record **E/S**- English/Spanish, **ESRD**- end stage renal disease, **FI** -financial incentive, **GV**- group visit(s), **HD**-hemodialysis, **HL** – health literacy, **IG**-intervention group **IV**- independent variable, **LHL**- limited health literacy, **LOE**- level of evidence, **LR**-linear regression, **M/F**- male/female, **MA**- mean age, **MI**-motivational interviewing, **mos**-months, **NC**- no change, **NIH**- National Institute of Health, **NS**-not stated, **N**- number of participants, **OR**- odds ratio, **OP**-outpatient **PCP**- primary care practice, **PE**-provider encouragement & education, **Pr**- provider, **Pt**-participant , **QNT**- quantitative, **RCF**- residential care facility **RCT**- randomized control trial, **SD**- standard deviation, **SES** – socio-economic status, **SW**-social worker, **UTA**- unable to asses, **w/-** with, **wk(s)**-week(s) **yrs**- years,

<p>among Medicaid beneficiaries : Lessons learned from two pragmatic randomized trials. Funding: Donaghue Foundation, Robert Wood Johnson Foundation Country: USA Bias: None</p>		<p>alone on ACPD</p>	<p>Demographics: MA: 67.6 yrs 60/30 E/S. M/F:50%/50 % IC: Medi-cal pt. 65+ I, no ACPD in 12 mos. EC: No DMC, inability to meet IC. Setting: PCP/OP</p>	<p>(obtain via blinded contractor) PREPARE site user metrics: Registration, site use, use of and time of use of ACPD (before or after site use)</p>			<p>35 Pt used PREPARE site: 16/180 (8.9%) IG 19/200 (9.5%) CG (p=.701). 10 /27 (37%) ACPD after the Pt used PREPARE Site (IG), 5/5 (100%) CG group (p=.0149).</p>	<p>current Medi-Cal reimbursement strategy. Conclusions: Pr delivered Pt. FI iprovides a small effect on ACPD, and may be synergistic with PREPARE, as rates increased after use Feasibility: If funded, incentive intervention could be added to other ACPI of PREPARE</p>
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<p>Bravo, G. et al. (2016) Promoting advance care planning among community-based older adults: A randomized controlled trial. Funding: Canadian Institutes of Health Research Country: Canada Bias: None</p>	<p>CBT.-inferred</p>	<p>QNT; Cohort study Pre-post intervention Purpose: Compare effectiveness of a Hypothetical Vignette ACPI w/ ACP & PE to ACP & PE alone on ACPD in older adults</p>	<p>N:168 IC:70+ yrs CDw, DMC, and agrees to designate a potential proxy who resides in the same region and is willing to enroll as a co-Pt EC: Inability to meet IC. No DMC Setting: PCP/OP Demographics: 89% identify as Roman Catholic, MA: 77.6, +/- 4.7 yrs (SD),</p>	<p>IV: ACPI= MSI w/ MI w/ SW focused on hypothetical vignettes, ACPB & PE DV: ACPD CG: ACPB & PE</p>	<p>DV: ACPD: ACPB completion, direct measure.</p>	<p>UTANS</p>	<p>80% ACPD (94/118) IG</p>	<p>LOE:III (RCT in title done on proxy prediction variables, not ACPD, RCT portion not considered in review). Strengths: IV had strong response rate for ACPD and is reproducible from available study text. Weaknesses: Religious demographic bias of sample; Catholic nearly 90%. IC: Need of proxy co-participant at initiation of study to participate. CG was not given ACPI booklet and so true comparison to control group rate of ACPD is lacking. SW was used for IV, not NP/PCP Conclusions: IV is has strong result for ACPD, but is costly and time intensive. May not be</p>
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			Attrition: 50 pts; 118/168: 30%					reproducible intervention identically. Feasibility: Is feasible to reproduce booklets.
Courtright, et. al. (2017). A randomized trial of expanding choice sets to motivate advance directive completion. Funding: National Heart, Lung, and Blood Institute, the National Institute of Diabetes and Digestive &	BET	QNT; RCT Purpose: Compare effectiveness of expanded AD choice sets to standard AD on AD completion in older adults	N: 316 CG: 160 IG: 156 Setting: OP Sample Demographics MA: 56.7 yrs (+/-13.4) 70+% African American, low SES factors predominate sample. IC: ESRD, HD, no prior AD. EC:	CG: AD and ACPD option offered, Y/No. IV: Expanded AD choice set- Y1,Y2,Y3/No Y1,Y2,Y3/No: ACP or AD of varying degree of length & detail regarding specific EOL care situation. No option to decline ACPD & ACPD. DV: ACPD at three mos	DV: ACPD via completed, returned AD at three mos. UTA means, NS	LR	IV: 13.1% ACPD CG: 12.2% ACPD P = 0.80 Findings: Increasing the number of AD options offered does not increase likelihood of ACPD when compared to one standard simple AD.	LOE: II Strengths: RCT design; intervention study with concurrent controls. Weaknesses: DV measurement validity. Conclusions/Decision for use: While ACPD did not increase, impacts project guidance- do spend resources on multiple AD choice sets, do allow for pt. take form home from intervention setting.

Key: **ACP**-advance care plan **ACPB**- advance care plan booklet; includes: PREPARE booklet, Five Wishes booklets, Adjusted Respecting Choices booklet, **ACPD**- advance care plan documentation; includes: advance directive, living will, surrogate designation, or any advance directive plan discussion documentation, **ACPI**- advance care planning intervention, **AD**- advance directive, **BET**-behavioral economics theory **CBT**-cognitive behavioral theory, **CDw**-community dwelling, **CD**-chronic disease, **CG**-control group, **CHF**- Colorado Health Foundation **CI**-confidence interval, **CLT**- collaborative learning theory, **CR**- chart review **DEMV**- demographic variables **DMC**-decision making capacity (includes severe visual loss), **DV**-dependent variable; **EC**- exclusion criteria, **EOL**- end of life, **EMR**- electronic medical record **E/S**- English/Spanish, **ESRD**- end stage renal disease, **FI** -financial incentive, **GV**- group visit(s), **HD**-hemodialysis, **HL** – health literacy, **IG**-intervention group **IV**- independent variable, **LHL**- limited health literacy, **LOE**- level of evidence, **LR**-linear regression, **M/F**- male/female, **MA**- mean age, **MI**-motivational interviewing, **mos**-months, **NC**- no change, **NIH**- National Institute of Health, **NS**-not stated, **N**- number of participants, **OR**- odds ratio, **OP**-outpatient **PCP**- primary care practice, **PE**-provider encouragement & education, **Pr**- provider, **Pt**-participant , **QNT**- quantitative, **RCF**- residential care facility **RCT**- randomized control trial, **SD**- standard deviation, **SES** – socio-economic status, **SW**-social worker, **UTA**- unable to assess, **w/-** with, **wk(s)**-week(s) **yrs**- years,

Kidney Diseases; the Center for Health Incentives & Behavioral Economics, University of Pennsylvania ; The Otto Haas Charitable Trust Country: USA Bias: None			Impaired vision or cognition, No/limited English comprehension Attrition: 18.9%, (256 /316), NS					
Lum, H. et al. (2017) A group visit initiative improves advance care planning documentation among older adults	CLT - Stated	QNT; Pre-post intervention evaluation Purpose: Evaluate effect of	N:118 Demographics MA: 76 years; M/F: 38%/62% 82% white IC: aged 65+ yrs and received care at one of three	IV: GV DV: ACPD at baseline, 3mos, and 12mos post ACPI GV: 2-sessions, 30-45minutes, comprised of peer-based learning and goal setting; use of	DV: EMR CR baseline , 3mos, &12 mos. DEMV: descriptive Statistics,	DV: McNemar test DEMV: Student t test	DV: ACPD baseline to 3mos 39% to 81% (P \leq .001) at 12-mos 89% (P \leq .001) AD,	LOE: III Strengths: RCT design; Before-and-after intervention study with concurrent controls. Weaknesses: 80%+ of sample White w/ Medicare or TRICARE, project site

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<p>in primary care. Funding: NIH, CHF, National Palliative Care Research Center, and the Colorado Clinical & Translational Sciences Institute & Development and Informatics Service Center Country: USA Bias: None</p>		<p>GV on ACPD</p>	<p>participating PCP Attrition: 16%</p>	<p>Conversation Starter Kit and PREPARE site use. DEMV: Age, sex, insurance type.</p>			<p>LW ACPD in EMR 20% at base line to 57% at 3 months (P .001) and to 67% at 12 months (P.001).</p>	<p>demographics majority Latino and uninsured. Resource intensive Conclusions: GV w/ PREPARE facilitate ACPD. Resource and time intensive Feasibility: Recommended for use in practice due to the effectiveness of the PREPAPRE site and applicability of GV Decision for practice/ application to practice: PREPARE site should be incorporated</p>
<p>Nedjat-Haiem, F. R. et al. (2019).</p>	<p>Social Psychology; MI- Stated</p>	<p>QNT; RCT</p>	<p>N:61 IG: 30 CG:31</p>	<p>IV: ACPI: MI, PE, a OSI, 30 to 40 minutes, DV1: ACPD</p>	<p>DV1: participant self report</p>	<p>DV1: LR DV2: LR</p>	<p>Latinos appear to pre</p>	<p>LOE: II Strengths: Before-and-after intervention study with concurrent controls.</p>

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<p>Efficacy of motivational interviewing to enhance advance directive completion in Latinos with chronic illness: A randomized controlled trial. Funding: None Country: USA Bias: None</p>		<p>Purpose: Compare effectiveness of MI to no MI on ACPD and ADC</p>	<p>Demographics: MA:65.9 (SD: 8.79), M/F: 23%/77%. Setting: PCP/OP Attrition: 61/74: :17.6%; 13/74 (6/13 were deceased or too sick to participate)</p>	<p>DV2: ACP survey scores CG: AD only w/ PE DEMV: Age, sex, SES factors</p>	<p>Y/N on ACPD post MI ACPI or the CG ACPE and AD alone. DV2: ACPR 9 items scored on a 4-point Likert scale ACPD: participant Y/N of 'ACPD Y/N posttest</p>	<p>DEMV: Cronbach to determine internal reliability of the DEMV factors</p>	<p>for family-centered decision-making for EOL care IG ACPD: [OR] .6.901; P < .05) after controlling for DEMV</p>	<p>Weaknesses: Gender imbalance, Conclusions: MI appears to show efficacy in ACPD as ACPI in Latinos, the majority site ethnicity. Feasibility: Recommended for use in practice due to the effectiveness, population appropriateness/transferability.</p>
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<p>Overbeek, A. et al. (2018). Advance care planning in frail older adults: A cluster randomized controlled trial. Funding: Netherlands Organization for Health Research and Development, Foundation Theia, and the Laurens, a care organization. Country: Netherlands Bias: Institutional</p>	<p>Hibbard’s model of patient activation - Stated</p>	<p>QNT; RCT Purpose: determine effectiveness of ARC ACPI on ACPD in older frail</p>	<p>Setting: 16 RCF N=160; IG:77 CG:83 Demographics: MA: 76yrs (SD NS) M/F: 29%/71% Setting: O/P, CDw, RCF IC: 75 + yrs, Frail, w/ DMC, (Mini-Mental State Examination score +17, unadjusted for education).</p>	<p>IV :ACPI ACPB, PE DV: ACPD DEMV: Age, sex, marital, education, frailty. ARC ACPI: Adjusted Respecting Choices ACPI; 12 mos program, trained nurses had one on one meetings with Pt. Goals of program : information provision with leaflets; facilitated ACP conversations based on scripted interview cards; and written ACPD.</p>	<p>DV: ACPD: Pt declaration Y/N for ACPD at 12 mos DEMV: Pt. self-reported.</p>	<p>DV: Chi-square rtest DEMV: multilevel analyses of variance, which were considered significant at p<.05</p>	<p>IG: 93% ACPD vs, CG: 34%; ACPD p<.001, - of the IG (89%) appointed their decision-maker in writing, whereas the majority of the CG (63%) did so orally- (p<.001)</p>	<p>LOE: II Strengths: Before-and-after intervention study with concurrent controls.= international approval of ACPI, able to generalize to US population; ARC. RN and SW implemented ARC ACPI, suggest implementation across professions/settings. Weaknesses: Majority RCF setting- not CDw or PCP/OP population focused, M/F ratio effected as more women in RCF in general. Conclusions: Long length of ACPI (12 mos) but strong results (p<0.001) Feasibility: Recommended for use in</p>
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<p>bias, care (the Laurens) organization supplied population sample in part.</p>			<p>Attrition: 41/201, 20%, more than ½ died or moved to another facility.</p>					<p>practice due to the effectiveness of ARC ACPI, ARC available in English- and is U.S. program. May be able to adjust intervention length of time. RCF lends to captive Pt pool. PCP/OP will need consistent f/u for ACPI.</p>
<p>Sudore, R. L. et al. (2017). Effect of the PREPARE website vs an easy-to-read advance directive on advance care planning documentation and engagement</p>	<p>CBT- Inferred</p>	<p>QNT; RCT Purpose: Determine and compare effect of PREPAR E site ACPI and AD alone</p>	<p>Setting: PCP/OP Sample N: 414 IG: 205 CG: 209 IC: 60+ yrs; 2+ CD. 2+ PCP/OP visit, 2+ additional PCP, hospital, or emergency</p>	<p>IV: PREPARE AD IV2: ACP engagement survey DV1: ACPD at nine mos DV2: ACP engagement survey results DEMV: age, race/ethnicity, SD,HL, SES factors.</p>	<p>DV1: Direct measurement of ACPD at nine mos DV2: results at one wk; and three, six, &12 mos; Mixed methods, effect sizes used: small,0.20-0.49,</p>	<p>DV1: Unpaired t tests, Chi-square tests, Fisher exact test DV2: Mixed-effects logistic and linear</p>	<p>DV1: PREPARE vs the AD-alone arm 35%vs 25%, adjusted odds ratio, 1.61; 95%CI, 1.03-2.51, P = .04</p>	<p>LOE: Strengths: Before-and-after intervention study with concurrent controls. Weaknesses: Conclusions: Feasibility: Recommended for use in practice due to the effectiveness of t</p>

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<p>among veterans: A randomized clinical trial Funding: US Department of Veterans Affairs, Country:US A Bias: Institutional; Medicare provider incentive of ACP, VA Medicare beneficiaries in Sample</p>		<p>ACPI on ACPD.</p>	<p>room visits in the 12 mos. EC: no DMC, blindness, deafness, active drug or ETOH abuse w/in three mos, no telephone in home. Attrition:10 % (374/414), NS</p>		<p>medium,0.50-0.79, large, ≥ 0.80 Adjustment variable: HL</p>	<p>regression ,</p>	<p>DV2: ACP survey results higher for ACP behavior scores in PREPARE group P <0.001 DEMV: Age,gender, race/ethnicity,US acculturation, HL, presence of SD,, health status, access to or prior ACPD did not show effect interaction.</p>	<p>Decision for practice/ application to practice</p>
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<p>Sudore, R. L. et al. (2018). Engaging diverse English- and Spanish-speaking older adults in advance care planning: The PREPARE randomized clinical trial. Funding: NIH, National Institute on Aging, Patient-Centered Outcomes Research Institute. Country: USA</p>	<p>CBT-Inferred</p>	<p>QNT; RCT Purpose:</p>	<p>N: 986 IG: 481 CG: 505 Setting: PCP/OP Sample Demographics: MA: 63.3 yrs, 39.7% w/ limited HL, 45.1% Spanish speaking. IC: EC: Attrition: 15.6% (832/986), not directly stated</p>	<p>IV: PREPARE AD DV1: Documentation of ACP at 15 mos, ACP= AD, LW, and DD DV2: ACP validated survey to quantify behavior change and action</p>	<p>DV1: EMR CR DV2: ACP engagement survey results at 1week and 3,6, &12 mos; Mixed methods, effect sizes used: small,0.20-0.49, medium, 0.50-0.79, large, ≥0.80 Adjustment variable: HL</p>	<p>DV1: Unpaired t tests, χ^2 tests, Fisher exact test DV2: LR, effect sizes used small, 0.20-0.49; medium, 0.50-0.79; large, ≥0.80</p>	<p>DV1: PREPARE participant s complete more AD at 15 mos than AD alone, P<0.001 DV2: ACP survey results higher for ACP behavior scores in PREPARE group P <0.001</p>	<p>LOE: Strengths: Before-and-after intervention study with concurrent controls. Weaknesses: Conclusions: TCPs led by APN Feasibility: Recommended for use in practice due to the effectiveness of t Decision for practice/ application to practice LOE: III Strengths: RCT design, ease of implementation/translation to practice. Weaknesses: Not rural specific. Conclusions: Addition of PREPARE site ACPI facilitates ACP through direct increase of</p>
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<p>Bias: None</p>								<p>documentation and through behavior change that favors future ACP and AD documentation. Feasibility/Applicability to pt. population: Very</p>
<p>Wickersham, E. et al. (2019). Improving the adoption of advance directives in primary care practices. Funding: National Institutes of Health, Stephenson Cancer Center, National Institute of General Medical</p>	<p>CBT - Inferred</p>	<p>QNT; RCT Purpose: Compare effectiveness of AD alone vs FWAD on ACPD</p>	<p>6 PCP clinics N: 943 IG:450 CG: 493 Median: 76 (MA NS) M/F: 35/65 Setting: PCP/OP IC: 65 + yrs, DMC, presenting for non-emergent PCP visit. EC: no DMC Attrition: UTA</p>	<p>IV1: FWAD CG: OKAD DV: ACPD</p>	<p>DV:PCP logs, updated each wk for at 16-22 wks,</p>	<p>Chi-square</p>	<p>DV ACPD via FW was 3.89 times greater than that of the AD alone (95% CI: 2.88 to 5.24; P < .0001</p>	<p>LOE: II Strengths: Before-and-after intervention study with concurrent control. Weaknesses: Relied on clinic logs for measurement, no EMR/CR for audit. Conclusions: FWAD has better completion rate than OKAD, OK Feasibility: Recommended for use in practice due to the effectiveness of t</p>

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<p>Sciences, National Institute on Minority Health andHealth Disparities Country: USA Bias: None</p>								
<p>Zapata, Cet al. (2017). Using a video-based advance care planning (ACP) website to facilitate group visits for diverse older adults in primary care Is feasible And improves</p>	<p>CLT-inferred</p>	<p>QNT; Pilot feasibility; Cohort Pre-Post intervention evaluation Purpose: Evaluate effectiveness of PREPAR E site use w/ GV</p>	<p>N: 22 Sample : MA: 64 +/-7 yrs (SD) 73%-non-white 55%- limited HL IC: 55+yrs, 2+ CD EC: NS Setting: PCP/OP Attrition: UTA</p>	<p>IV: ACPI=PREPARE +GV; two 90-minute GVs and viewed the 5-step videos of the PREPARE program DV: ACPD DV:REPARE Survey score</p>	<p>DV: ACPD: Not indicated DV2: Ease of use Survey: 10-pt Likert scale</p>	<p>DV1: Fisher's exact DV2: Mean, SD</p>	<p>(48% vs. 85%, p .0.01) and a trend toward advance directive completion (9% vs. 24%, P .0.21). Participants rated the GV and PREPARE materials a</p>	<p>LOE: III Strengths: Not resource intensive, large effect size. Pt reported ease of use. Weaknesses: Pilot, not a large scale randomized control trial, some limited data, ie; attrition. Conclusions: Another study that shows efficacy for GV and PREPARE interventions</p>

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ACP engagement. Funding: Not Stated Country: USA Bias: due to lack of funding information.		ACPI on ACPD.					mean of 8 (_ 3.1) on a 10-point ease-of-use scale	Feasibility: Recommended for use in practice due to the effectiveness and ease of use of PREPARE
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Evaluation of the Evidence

Key: **ACP**-advance care plan **ACPB**- advance care plan booklet; includes: PREPARE booklet, Five Wishes booklets, Adjusted Respecting Choices booklet, **ACPD**- advance care plan documentation; includes: advance directive, living will, surrogate designation, or any advance directive plan discussion documentation, **ACPI**- advance care planning intervention, **AD**- advance directive, **BET**-behavioral economics theory **CBT**-cognitive behavioral theory, **CDw**-community dwelling, **CD**-chronic disease, **CG**-control group, **CHF**- Colorado Health Foundation **CI**-confidence interval, **CLT**- collaborative learning theory, **CR**- chart review **DEMV**- demographic variables **DMC**-decision making capacity (includes severe visual loss), **DV**-dependent variable; **EC**- exclusion criteria, **EOL**- end of life, **EMR**- electronic medical record **E/S**- English/Spanish, **ESRD**- end stage renal disease, **FI** -financial incentive, **GV**- group visit(s), **HD**-hemodialysis, **HL** – health literacy, **IG**-intervention group **IV**- independent variable, **LHL**- limited health literacy, **LOE**- level of evidence, **LR**-linear regression, **M/F**- male/female, **MA**- mean age, **MI**-motivational interviewing, **mos**-months, **NC**- no change, **NIH**- National Institute of Health, **NS**-not stated, **N**- number of participants, **OR**- odds ratio, **OP**-outpatient **PCP**- primary care practice, **PE**-provider encouragement & education, **Pr**- provider, **Pt**-participant , **QNT**- quantitative, **RCF**- residential care facility **RCT**- randomized control trial, **SD**- standard deviation, **SES** – socio-economic status, **SW**-social worker, **UTA**- unable to asses, **w/-** with, **wk(s)**-week(s) **yrs**- years,

Table 2

Synthesis Table

Study Authors		Barnato, A. E. et al.	Bravo, G. et al.	Courtwright, et al.	Lum, H. et al.	Nedjat-Haiem, F.	Overbeek, A. et al.	Sudore, R. L. et al.	Sudore, R. L. et al.	Wickersham, E. et al.	Zapata, C. et al.
Basics	Year	2017	2016	2017	2017	2019	2018	2017	2018	2019	2017
	LOE	II	III	II	III	II	II	II	II	II	III
	Design	RCT	CPP E	RCT	CPPE	RCT	RCT	RCT	RCT	RCT	CPPE

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	PCP/OP setting	X	X	X	X	X	X	X	X	X	
	Mean Age	68 yrs	78 yrs	57 yrs	76 yrs	66yrs	76yrs	71 yrs	63 yrs	NS	64yrs
	Attrition	NS	30%	19%	16%	18%	20%	10%	16%	NS	NS
	# of Pt	380	168	316	118	61	160	414	986	943	22
Demographic Details	M/F	50/50	55/45	59/41	38/62	23/77	29/71	91/9	39/61	35/65	45/55
	E/S	60/30	100/0	100/0	100/0	30/70	NS	100/0	55/45	NS	NS
	LHL			X			X	X	X		X

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	½+ non-white			X				X	X		X
Interventions	PE	X	X			X	X	X	X		
	FI	X									X
	MSI		X		X		X				X
	OSI	X		X		X		X	X		
	GV				X						X
	MI		X			X	X				
	ACPB		X	X			X	X	X	X	

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	PREPARE	X			X			X	X		X
	PCP led IVs	X	X		X	X	X	X	X	X	X
ACPD Findings	CR/EMR/AC PB	X	X	X	X			X	X		NS
	Pr or Pt report	X				X	X			X	NS
	↑:small increase, ↑↑:large increase	↑	↑↑	NC	↑↑	↑↑	↑↑	↑↑	↑↑	↑↑	↑↑

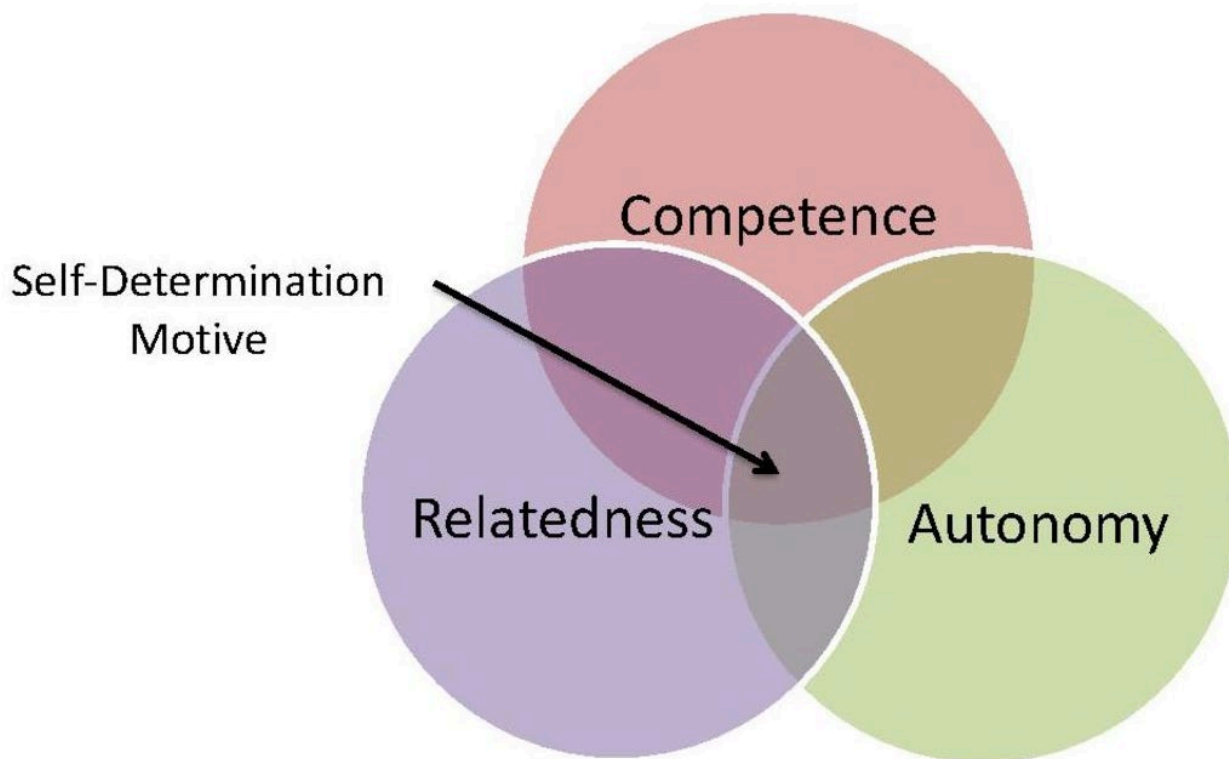
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Appendix B

Figure 1

Self-Determination Theory Venn Diagram

Three Innate Psychological Needs Comprise The Self-Determination Theory of Student Motivation



Source: Deci, E.L., & Ryan, R.M. (2000). The "What" and "Why" of goal pursuits: Human needs and the self-determination of behaviour. *Psychological Inquiry*, 11, 227-268.

Figure 2

PDSA fillable worksheet:

PLAN DO STUDY ACT (PDSA) FORM

Start Date: Cycle #:
 End Date:

Project Title: Project Lead:
 State:

Task-related; Task:
 Internal Process

Objective of this Cycle:
 Develop a Change Test a Change Implement a Change

Aim Statement (WHAT YOU ARE TRYING TO ACCOMPLISH):

- Specific- targeted population:
- Measurable- what to measure and clearly stated goal:
- Achievable- brief plan to accomplish it:
- Relevant- why is it important to do now:
- Time Specific- anticipated length of cycle:



Test/Implementation Plan (THINK ABOUT WHAT CHANGES YOU CAN MAKE THAT WILL RESULT IN IMPROVEMENT):

What change will be tested or implemented? Include how change will be conducted, who will run it, where it will be run and when it will be run unless already noted in Aim Statement above. (If needed, include specifics on tasks, responsibilities and due dates.)

Prediction:

Data Collection Plan (THINK ABOUT HOW YOU WILL KNOW THE CHANGE IS AN IMPROVEMENT):

What data/measures will be collected?

Who will collect the data?

(Plan-Do-Study-Act (PDSA) Worksheet | IHI - Institute for Healthcare Improvement, n.d.)

Figure 3

PDSA Cycle and Steps



(Plan-Do-Study-Act (PDSA) Cycle | AHRQ Health Care Innovations Exchange, n.d.)

Figure 4

Chart: New Patients and Existing Patients

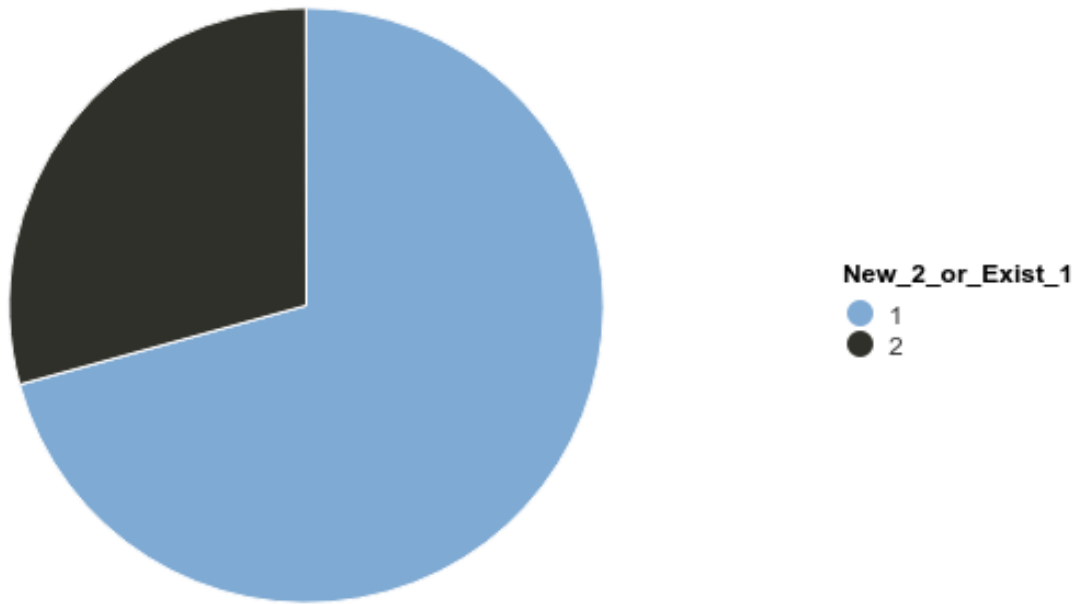


Figure 5

Chart: Age of Patients in Ten Year Increments

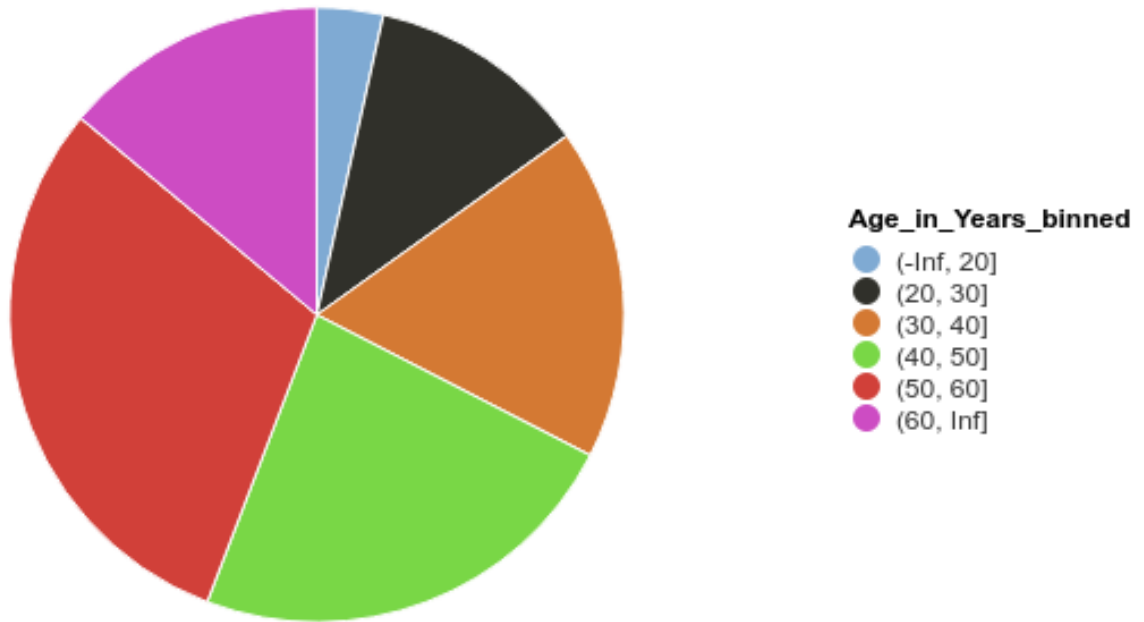


Figure 6

Chart: Education Level of Patients

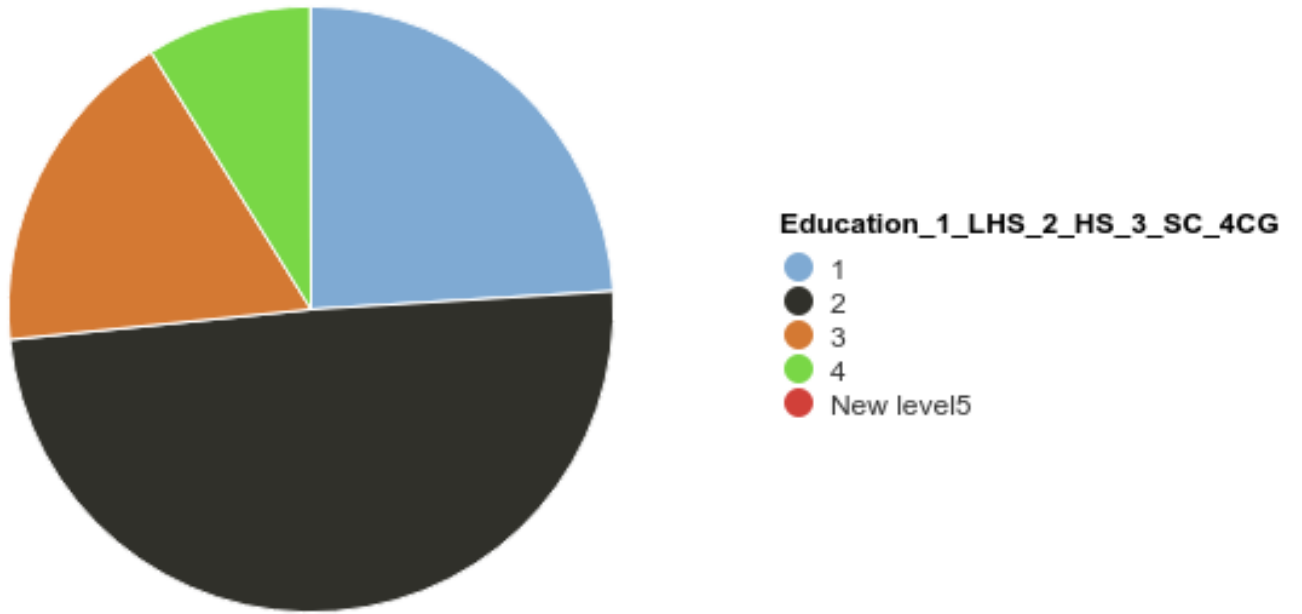


Figure 7

Chart: Marital Status of Patients

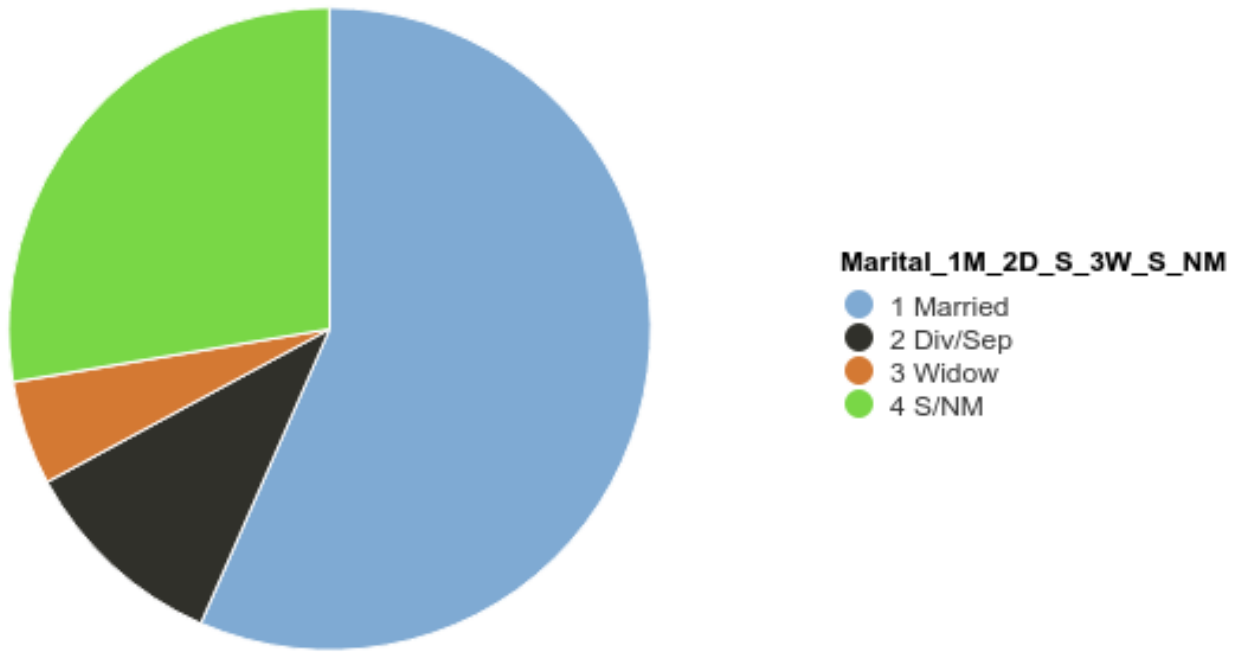


Figure 8

Chart: Gender Proportion of Patients

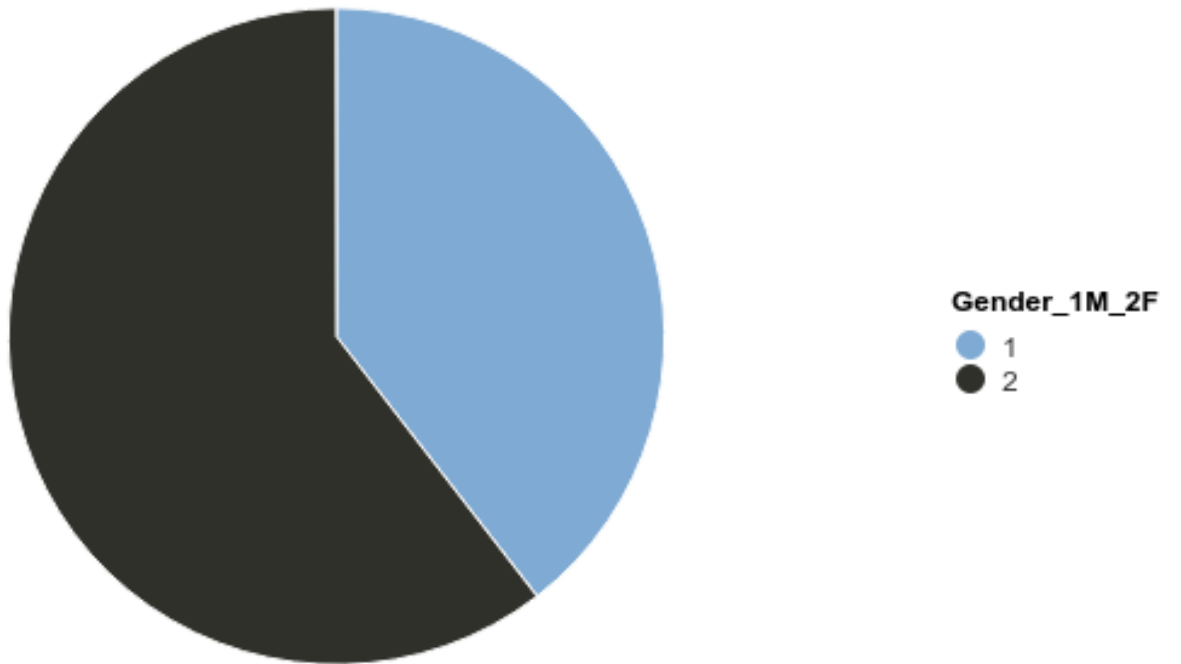


Figure 9

Chart: *Ethnicity of Patients New Patients and Existing Patients*

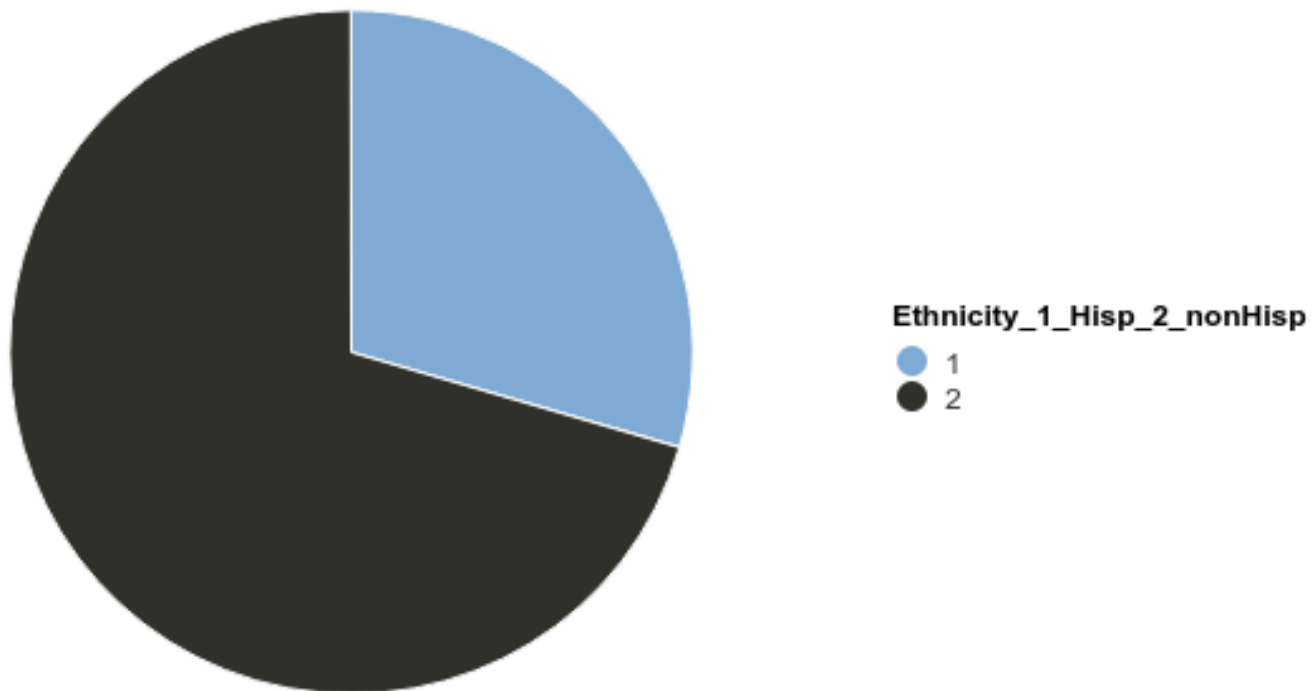
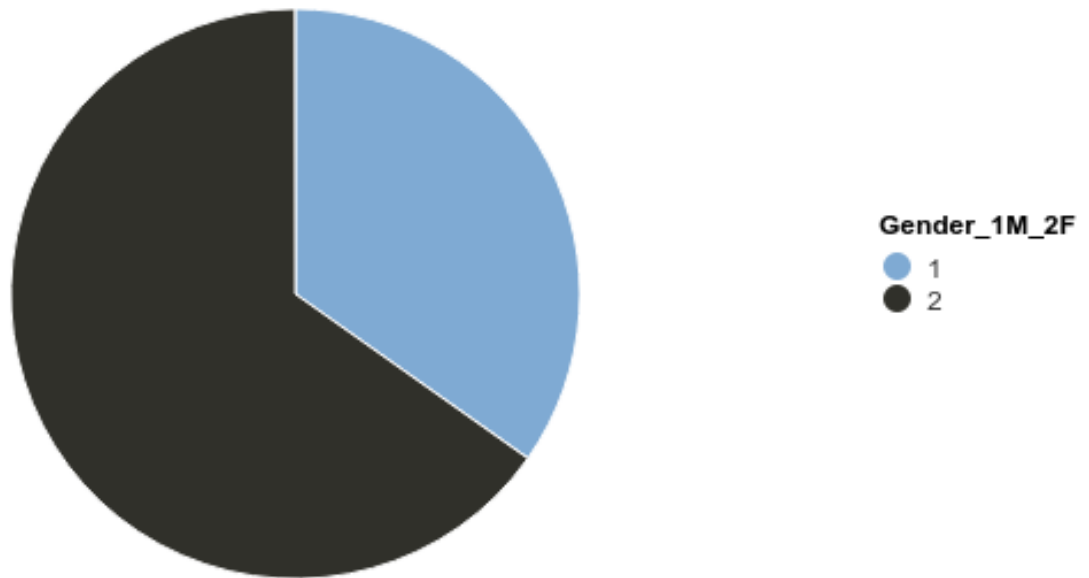


Figure 10

Chart: Gender Proportion of Self-identified Hispanic Patients

Filtered by Ethnicity_1_Hisp_2_nonHisp(1)



Appendix C

Budget

Table: *Project projected costs.*

Project Needs / Items	Expenses	In-Kind Support
Personnel		
Project director (DNP Student) 60 hrs @ \$35/hr		\$2100.00
Site Champion 2 hrs/month x 3 months @ \$40/hr		\$240.00
Primary Care Providers (3) meeting of overview of project design, aims, and rollout dates. 1 hr @ \$95/hr		\$285.00
anish translator; Estimated 20 hours @ \$17/hr to translate materials.	\$340	
Equipment/Tech/Materials		
iPad with charging cords @ \$329 / each x 3		\$990.00
Wi-Fi/Internet access with router @ 100/month x 4 months	\$400.00	
Paper, ink, printing supplies: at least two 500 sheet reems: \$60-100 at least three black cartridges: \$80-120 ,at least two, color cartridges. \$80-160	\$500	
Office printer & Computer, Basic desktop : \$300		\$430.00

AUTONOMY FOR RURAL SENIORS

Average printer cost: \$100-130		
Intellectus software		\$150
Office Operations		
Use of volunteer providers' community clinic for implementation of project		\$275.00
Electricity, A/C, utilities x 3 months		\$400.00
Estimated per site champion		
Lockable drawer/filing cabinet for patient charts and project data. X2, 1 at site , 1 at PI residence.	\$800	\$800
Portable, locking cabinet for data safety during transit between data collection at site to PI work site.	\$90	
Indirect Costs		
Costs of travel to site outside Maricopa county, including hotel, gas.	\$325.00	
Three nights over the course of three months @ ~80/night x3 : ~240		
Four tanks (40 gallons gasoline, regular for PI vehicle for on-site implementation: 2.35/gal x 40 gallons: ~\$85. Round trip is 320+ miles now that AZ-87 to Payson is closed due to Brush fire, if re-opens soon, gas costs may drop to ~60		
Projected Revenue	No revenue generation	
Indirect costs or cost savings to site or providers.	None Identified	
Total Projected Project Cost		\$
Total Expenses after In-kind support		\$

(IPad 10.2-Inch, n.d.) (6 Best Internet Service Providers in Payson, AZ (Updated 2020), n.d.)(HP 6300 Professional Desktop Computer 4GB RAM 1TB HDD Windows 10 Home Includes 22in LCD Monitor, Mouse and Keyboard - Walmart.Com - Walmart.Com, n.d.)(Germain, n.d.)(Storage & Filing - National Office Interiors and Liquidators, n.d.)(Shop Staples for Vaultz® Locking Mobile Wheelie Chest Letter/Legal, Black, n.d.)

